

Pond Sealing, Bentonite Sealant

PRACTICE INTRODUCTION

USDA, Natural Resources Conservation Service - practice code 521C



DEFINITION

Pond sealing with bentonite sealant is applying and incorporating a layer of bentonite clay into the soil to reduce seepage to an acceptable level.

PRACTICE INFORMATION

This practice is used to improve the functionality of a pond, and prevent damage to the natural resources including unacceptable loss of water from seepage.

Treating pond bottoms with bentonite clay is often necessary when an insufficient amounts

of clay is present for chemical dispersants to work properly. The chemical is applied over the entire area to be sealed, the material is incorporated to a specified depth and then compacted as the final operation.

Ponds to be lined may include Irrigation Storage Reservoirs, Irrigation Pits, Waste Treatment Lagoons, Waste Treatment Ponds, and Ponds For Livestock/Wildlife.

Additional information including design criteria and specifications are in the local NRCS Field Office Technical Guide.

The following pages list the conservation effects expected to occur when this practice is applied. These effects are subjective and somewhat dependent on variables such as climate, terrain, and soil. Users are cautioned that these effects are estimates that may or may not apply to a specific site.

CONSERVATION PRACTICE PHYSICAL EFFECT WORKSHEET

NOTE: recorded in Microsoft word 6.0 - use tabs to change cells/fields

STATE	Iowa	FIELD OFFICE	DATE	5/15/97
PRACTICE: 521C Pond Sealing, Bentonite Sealant			NOTES: Conservation effects are highly dependent on the type of pond being sealed and use of the pond.	
RESOURCE: SOIL RESOURCE CONCERN: EROSION			Help Message: Click on form field for choice lists. Refer to Microsoft Word Users Guide (Creating a form)	
RESOURCE INDICATORS			PHYSICAL EFFECTS	
SHEET AND RILL			N/A	
WIND			N/A	
EPHEMERAL GULLY			N/A	
CLASSIC GULLY			N/A	
STREAMBANK			N/A	
IRRIGATION INDUCED			N/A	
SOIL MASS MOVEMENT			N/A	
ROADBANK/CONSTRUCTION			N/A	
OTHER				
RESOURCE CONCERN: SOIL CONDITION				
SOIL TILTH			N/A	
SOIL COMPACTION			N/A	
SOIL CONTAMINATION				
• SALTS			N/A	
• ORGANICS			N/A	
• FERTILIZERS			N/A	
• PESTICIDES			N/A	
• OTHER				
DEPOSITION/DAMAGE				
• ONSITE			N/A	
• OFFSITE			N/A	
DEPOSITION/SAFETY				
• ONSITE			N/A	
• OFFSITE			N/A	
OTHER				
RESOURCE: WATER RESOURCE CONCERN: WATER QUANTITY				
SEEPS			moderate reduction in seepage hazard	
RUNOFF/FLOODING			insignificant	
EXCESS SUBSURFACE WATER			moderate reduction in excess subsurface water	
INADEQUATE OUTLETS			slight improvement in H2O outlet concern	
WATER MGT. IRRIGATION				
• SURFACE			situational concerning IWM, surface	
• SPRINKLER			situational concerning IWM, sprinkler	
WATER MGT. NON-IRRIGATED			situational concerning improved moisture use	
RESTRICTED FLOW CAPACITY (H2O convey.)				
• ONSITE			N/A	
• OFFSITE			N/A	
RESTRICTED STORAGE			N/A	

RESOURCE: WATER	
RESOURCE CONCERN: WATER QUALITY	
RESOURCE INDICATORS	PHYSICAL EFFECTS
GROUNDWATER CONTAMINANTS	
• PESTICIDES	situational concerning GWater contam./pesticides
• NUTRIENTS AND ORGANICS	situational concerning GWater contam./nutr.&organ.
• SALINITY	situational concerning GWater contam./salinity
• HEAVY METALS	N/A
• PATHOGENS	slight poten. decrease/GWater contam./pathegens
• OTHER	
SURFACE WATER CONTAMINANTS	
• PESTICIDES	N/A
• NUTRIENTS AND ORGANICS	N/A
• SUSPENDED SEDIMENTS	N/A
• LOW DISSOLVED OXYGEN	N/A
• SALINITY	N/A
• HEAVY METALS	N/A
• WATER TEMPERATURE	N/A
• PATHOGENS	N/A
AQUATIC HABITAT SUITABILITY	significant improvement in Aqua. Hab. Suit.
OTHER	
RESOURCE: AIR	
RESOURCE CONCERN: AIR QUALITY	
AIRBORNE SEDIMENT AND SMOKE PARTICLES	
• ONSITE SAFETY	N/A
• OFFSITE SAFETY	N/A
• ONSITE STRUCT. PROBLEMS	N/A
• OFFSITE STRUCT. PROBLEMS	N/A
• ONSITE HEALTH	N/A
• OFFSITE HEALTH	N/A
AIRBORNE SEDIMENT CAUSING CONVEYANCE PROBLEMS	N/A
AIRBORNE CHEMICAL DRIFT	N/A
AIRBORNE ODORS	N/A
FUNGI, MOLDS, AND POLLEN	N/A
OTHER	
RESOURCE CONCERN: AIR CONDITION	
AIR TEMPERATURE	N/A
AIR MOVEMENT (windbreak effect)	N/A
HUMIDITY	N/A
OTHER	

[illegible]

RESOURCE: HUMAN	
RESOURCE CONCERN: SOCIAL CONSIDERATIONS	
RESOURCE INDICATORS	PHYSICAL EFFECTS
PUBLIC HEALTH AND SAFETY	N/A
PRIVATE/PUBLIC VALUES	N/A
CLIENT CHARACTERISTICS	N/A
RISK TOLERANCE	N/A
TENURE	N/A
OTHER	
RESOURCE CONCERN: CULTURAL CONSIDERATIONS	
ABSENCE/PRESENCE OF CULTURAL RESOURCES	N/A
SIGNIFICANCE OF CULTURAL RESOURCES	N/A
MITIGATION OF NEGATIVE CULTURAL RES. IMPACTS	N/A
OTHER	